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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/634,479	08/04/2003	Allen R. Cox	GB920020017US1	6787
29683	7590	11/02/2004	EXAMINER	
HARRINGTON & SMITH, LLP 4 RESEARCH DRIVE SHELTON, CT 06484-6212			AUSTIN, MELISSA J	
			ART UNIT	PAPER NUMBER
			1745	

DATE MAILED: 11/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/634,479

Applicant(s)

COX ET AL.

Examiner

Melissa Austin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) 20 and 24-30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-10, 13, 15-19 and 21-23 is/are rejected.
- 7) ☒ Claim(s) 4, 11, 12 and 14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 August 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☒ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Claims 20, 24-30 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on October 18, 2004.
2. Applicant's election with traverse of Group I in the telephonic communication on October 18, 2004 is acknowledged. Applicant did not distinctly and specifically point out the supposed errors in the restriction requirement; therefore, the election has been treated as an election without traverse.

The requirement is still deemed proper and is therefore made FINAL.

Priority

3. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 142. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The drawings are objected to because reference numbers are cut off on Figure 1B. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Information Disclosure Statement

5. The Information Disclosure Statement (IDS) filed on November 3, 2003 has been considered by the examiner.

Specification

6. The abstract of the disclosure is objected to because it contains too many words. The abstract must contain no more than 150 words and consist of one paragraph. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 112

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

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art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 7 and 16 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Applicant has not defined in the specification what is meant by the term "sprung logic contacts." Examiner is not familiar with this term and has searched patent databases and the Internet for a definition and/or examples of such contacts. To overcome this rejection applicant must provide some textual reference defining or citing examples of "sprung logic contacts."

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 17 recites the limitation "the logic device" in line 1. There is insufficient antecedent basis for this limitation in the claim. Amending claim 17 to be dependent on claim 16 would overcome this rejection, but the issue of enablement as discussed in the above 35 USC 112, first paragraph, rejection would still apply.

9. Claims dependent from claims rejected under 35 USC 112, first and/or second paragraph are also rejected for the same.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claim 21 is rejected under 35 U.S.C. 102(b) as being anticipated by Andrews (5,573,870). Andrews teaches a removable battery pack (applicant's battery mounting) containing a housing for a number of batteries (Col. 1, ll. 13-14; Col. 2, l. 37), a flexible cantilevered tab with a downward protruding

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detent (Col. 1, ll. 55-58), and electrical connectors (applicant's power contact) from the batteries to the battery pocket (built into the electrical device or a separate unit) (Col. 1, ll. 16, 39-52). The detent fits into a slot on the battery pocket which locks the battery pack from forward and rearward longitudinal movement (Col. 5, ll. 52-54); this detent/slot lock limits movement in the direction of the electrical connectors (Figures 5, 9: applicant's means for providing engagement between housing and portion of device and for locking the battery mounting in place in the device in direction of power contact).

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 1, 3, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Andrews (5,573,870) in view of Mareno et al. (5,935,729).

14. With respect to claims 1 and 6, Andrews teaches a removable battery pack (applicant's battery mounting) made of plastic containing a number of batteries (Col. 1, ll. 13-14; Col. 2, l. 37), a flexible cantilevered tab with a downward protruding detent (Col. 1, ll. 55-58), and electrical connectors (applicant's power contact) from the batteries to the battery pocket (built into the electrical device or a separate unit) (Col. 1, ll. 16, 39-52). The detent fits into a slot on the battery pocket which locks the battery pack from forward and rearward longitudinal movement (Col. 5, ll. 52-54); this detent/slot lock limits movement in the direction of the electrical connectors (Figures 5, 9). However, Andrews does not teach a clip with a cammed surface for providing cooperation between the housing and a portion of the device.

Mareno teaches a cam actuated latch for a battery case. Mareno discloses that an alternative to cantilever latches (Andrews' cantilevered tab) are spring-loaded cam latches (applicant's clip). In this type

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of latch, a leaf or coil spring is used to urge a latch member to an engaged position. The latch member often includes a camming surface engaged by an actuator element to move the latch member to a disengaged position. The spring-loaded latches provide smoother, almost constant latch action, are easier to design to obtain the desired latch force, travel and feel, and are often smaller.

One of ordinary skill in the art would also recognize that the camming surfaces of the latch member could be disposed on a closed battery case and the actuator disposed on the electrical device in order to provide a latching mechanism between the two structures. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a spring-loaded cam latch as taught by Mareno in place of the cantilevered tab in the plastic battery pack as taught by Andrews in order to provide smoother, almost constant latch action, easier design, and smaller size.

15. Regarding claim 3, Andrews and Mareno teach the elements of claim 1 as discussed in the 35 USC 103 rejection immediately above and incorporated herein. However, Andrews fails to teach a deflectable clip to allow mounting in the device with the cammed surface acting with the device to correctly position the battery mounting.

Mareno teaches that the latch member (applicant's clip) is pushed upwardly by springs (Col. 4, ll. 7-10). Mareno also teaches that the camming surfaces of the latching member (applicant's clip) are engaged by an actuator to urge the latching member into a retracted position to allow for removal of the battery pack from an electronic device (Col. 4, ll. 37-42; Col. 5, ll. 1-3).

One of ordinary skill in the art would recognize that the latch member deflects (because of the springs) to allow mounting in the electrical device. One of ordinary skill in the art would also recognize that the camming surfaces of the latch member could be disposed on a closed battery case and the actuator disposed on the electrical device in order to provide a latching mechanism between the two structures. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included on the battery pack as taught by Andrews the latching member as taught by Mareno in conjunction with an actuator disposed on the electrical device in order to prevent undesired removal from the electrical device.

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16. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Andrews (5,573,870) in view of Mareno et al. (5,935,729), and further in view of The American Heritage Dictionary of the English Language ('clamp').

Andrews and Mareno teach the battery mounting of claim 1 as discussed in the above 35 USC 103 rejection and incorporated herein but fail to disclose the lock as a screw or clamp applied to the clip. The detent/slot lock as taught by Andrews is used to support and compress the battery pack in order to limit movement.

According to The American Heritage Dictionary of the English Language, a clamp is any of various devices used to join, grip, support, or compress mechanical or structural parts.¹

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the detent/slot lock as taught by Andrews as a clamp in order to support and compress the battery pack in order to limit movement.

17. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Andrews (5,573,870) in view of Mareno et al. (5,935,729), and further in view of Cooper et al. (5,943,498). Andrews and Mareno teach the elements of claim 1 as discussed in the above 35 USC 103 rejection and incorporated herein. Andrews also teaches the battery pack being slid into and out of the battery pocket (Col. 1, ll.15-16). However, the reference fails to teach hooks on the battery mounting for hooking through openings in the device.

Cooper teaches a battery with projections (applicant's hook) extending from the battery casing. The receptacle for the battery (equivalent to applicant's electrical device, Andrews' battery pocket) is provided with holes or recesses (applicant's openings in the device) into which the projections fit, and the battery is slid transversely within the receptacle so that the transverse portions of the projections engage the underside of the receptacle and the electrical connects are brought into firm contact. The

¹ *The American Heritage® Dictionary of the English Language, Third Edition* copyright © 1992 by Houghton Mifflin Company. Electronic version licensed from INSO Corporation; further reproduction

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engagement of the projections and the holes allows retention of the battery in the receptacle in a readily releasable manner. (Col. 3, ll. 8-12, 28-31, 46-58; Col. 1, ll. 31-40).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included projections on the battery casing that fit into holes in the receptacle as taught by Cooper with the battery pack as taught by Andrews and Mareno in order to retain the battery pack in the electrical device (receptacle) in a readily releasable manner.

18. Claims 9, 10, 13, 15 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Andrews (5,573,870) in view of Mareno et al. (5,935,729) and Cooper et al. (5,943,498) and further in view of Byrd (5,707,249).

19. With respect to claims 9, 15, and 18, Andrews, Mareno, and Cooper teach the battery mounting as described in the above 35 USC 103 rejections of claims 1-3, 5, and 6, incorporated herein. Andrews teaches a slidably removable plastic battery pack with clamp lock and power contacts; Mareno teaches a cammed clip, and Cooper teaches hooks hooking through openings in the device on which the pack is mounted. However, the references do not teach a device having a board with power contacts and an opening in which the mounting is mounted.

Byrd teaches a device holder for holding a device in a spaced relationship to a printed circuit board (PCB) on which it is mounted. The device holder is appropriate for holding a battery. (Col 3, ll. 29-34). As seen in Figure 2, the forward edge (35) of the PCB (30) is received in a channel (32) of the holder (25) and deformable fastening means (37) are received in the apertures (40; applicant's opening) on the PCB. Connection is provided between the PCB and the device (Col. 2, ll. 4-9). Mounting the device holder on the PCB takes up less space and requires less wire (thus reducing resistance losses) than providing the device separate from the PCB (Col. 1, ll. 30-39).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have mounted the plastic battery mounting as taught by Andrews, Mareno, and Cooper on a PCB with openings for receiving the battery mounting as taught by Byrd in order to take up less space and require less wire (thus reducing resistance losses) than providing the device separate from the PCB.

20. Regarding claim 10, the elements of claim 9 are taught by Andrews, Mareno, Cooper, and Byrd and are incorporated herein. Andrews teaches a removable battery pack (applicant's battery mounting) made of plastic containing a number of batteries (Col. 1, ll. 13-14; Col. 2, l. 37), a flexible cantilevered tab with a downward protruding detent (Col. 1, ll. 55-58), and electrical connectors (applicant's power contact) from the batteries to the battery pocket (built into the electrical device or a separate unit) (Col. 1, ll. 16, 39-52). The detent fits into a slot on the battery pocket which locks the battery pack from forward and rearward longitudinal movement (Col. 5, ll. 52-54); this detent/slot lock limits movement in the direction of the electrical connectors (Figures 5, 9). However, Andrews does not teach a clip with a cammed surface for providing cooperation between the housing and a portion of the device.

Mareno teaches a cam actuated latch for a battery case. Mareno discloses that an alternative to cantilever latches (Andrews' cantilevered tab) are spring-loaded cam latches (applicant's clip). In this type of latch, a leaf or coil spring is used to urge a latch member to an engaged position. The latch member often includes a camming surface engaged by an actuator element to move the latch member to a disengaged position. The spring-loaded latches provide smoother, almost constant latch action, are easier to design to obtain the desired latch force, travel and feel, and are often smaller.

One of ordinary skill in the art would also recognize that the camming surfaces of the latch member could be disposed on a closed battery case and the actuator disposed on the electrical device in order to provide a latching mechanism between the two structures. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a spring-loaded cam latch as taught by Mareno in place of the cantilevered tab in the battery pack as taught by Andrews in order to provide smoother, almost constant latch action, easier design, and smaller size.

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21. Regarding claim 13, the elements of claim 9 are taught by Andrews, Mareno, Cooper, and Byrd and are incorporated herein. Andrews also teaches the battery pack being slid into and out of the battery pocket (Col. 1, ll.15-16). However, the reference fails to teach hooks on the battery mounting for hooking through openings in the device.

Cooper teaches a battery with projections (applicant's hook) extending from the battery casing. The receptacle for the battery (equivalent to applicant's electrical device, Andrews' battery pocket) is provided with holes or recesses (applicant's openings in the device) into which the projections fit, and the battery is slid transversely within the receptacle so that the transverse portions of the projections engage the underside of the receptacle and the electrical connects are brought into firm contact. The engagement of the projections and the holes allows retention of the battery in the receptacle in a readily releasable manner. (Col. 3, ll. 8-12, 28-31, 46-58; Col. 1, ll. 31-40).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included projections on the battery casing that fit into holes in the receptacle as taught by Cooper with the battery pack as taught by Andrews and Mareno in order to retain the battery pack in the electrical device (receptacle) in a readily releasable manner.

22. Claims 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Andrews (5,573,870) in view of Amero, Jr. (5,631,101). Andrews teaches the elements of claim 21 as discussed in the above 35 USC 102 rejection, incorporated herein. However, Andrews does not teach a logic means for monitoring battery information.

Amero, Jr. teaches a "smart battery;" that is, a battery pack having some electronic circuitry facilitating more efficient use of the stored energy. Circuits that have been developed include those used to provide a state of charge indication for the electronic device to which the battery pack is mounted. (Col. 1, ll. 51-55).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included in the battery pack as taught by Andrews electronic circuitry to provide state

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of charge indication for the electronic device as taught by Amero, Jr. in order to facilitate more efficient use of stored energy.

Allowable Subject Matter

23. Claims 4, 11, 12, and 14 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

24. The following is a statement of reasons for the indication of allowable subject matter: the prior art fails to teach 1) a protrusion with a central support between a first end and a second end of the protrusion, the first end has the cammed surface and engages the portion of the device, the lock acts on the second end of the protrusion, the protrusion is deflectable about the central support, 2) a clip that deflects to allow mounting in an aperture of the device and a cammed surface acting with the aperture in the device to urge the battery mounting into the correct mounted position relative to the device, 3) a battery mounting when inserted in place is recessed within the opening of a board.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melissa Austin whose telephone number is (571) 272-1247. The examiner can normally be reached on Monday - Friday, 7:15 AM - 3:45 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

mja

Melissa Austin
Patent Examiner
Art Unit 1745

Patrick Byrd
SPB-AU1745